ABSTRACT OF THE DISCLOSURE

A magnetic sensor includes a pinned magnetic layer having first and second magnetic sublayers sandwiching a

5   nonmagnetic metal layer. The nonmagnetic metal layer contains at least one of Ru, Re, Os, Ti, Rh, Ir, Pd, Pt, and Al. The atoms in the first magnetic sublayer and the atoms in the nonmagnetic metal layer overlap with each other, while each of the crystal structures is deformed. The

10 deformations in the crystal structure of the first magnetic sublayer increase the magnetostriction constant, thereby increasing the magnetoelastic effect of the magnetic sensor.